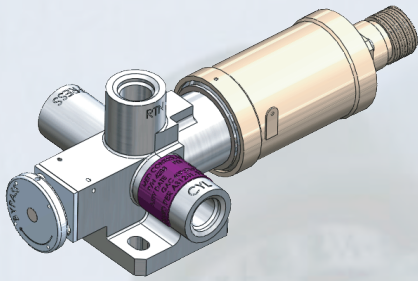
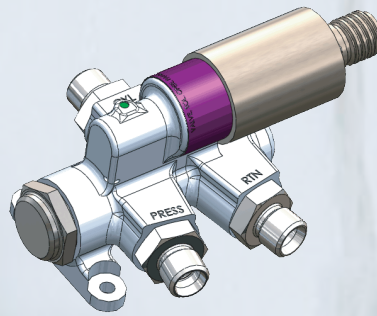


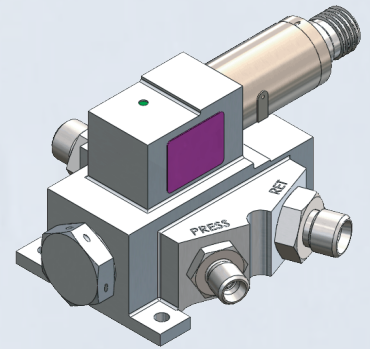
# PneuDraulics, Inc. - Solenoid Operated Control Valves



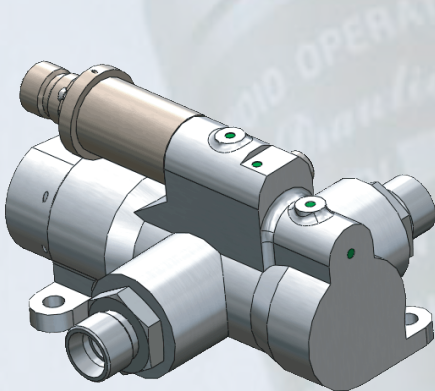
Direct-acting 2P-3W  
1.2 GPM @ 50 psid  
(Gulfstream G650)



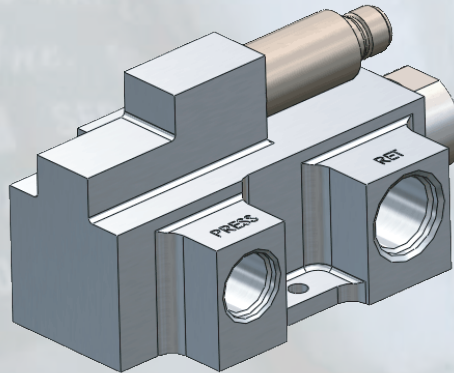
Pilot Operated 2P-3W  
3.5 GPM @ 50 psid  
(Gulfstream G550, Bombardier Challenger 300,  
Global Express, Embraer ERJ 190/195)



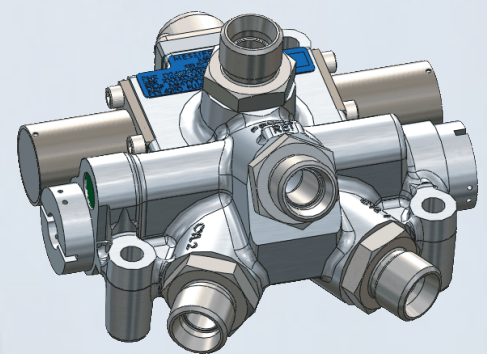
Pilot Operated 2P-3W  
3.0 GPM @ 50 psid  
(Gulfstream G650, ARJ-21)



Pilot Operated 2P-3W  
10 GPM @ 60 psid  
(ARJ-21)



Pilot Operated 2P-3W  
15 GPM @ 50 psid  
(Embraer ERJ170/175, ERJ 190/195)



Pilot Operated 3P-4W  
9 GPM @ 150 psid  
(Gulfstream G350, Learjet 85)

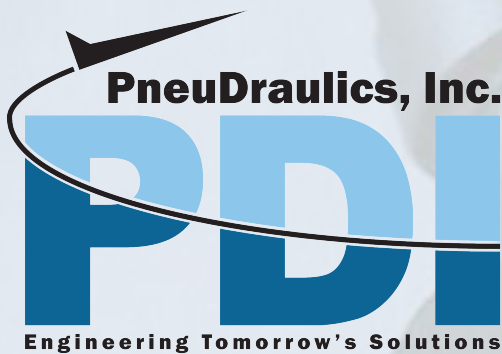
## Solenoid Operated Control Valve needs? PneuDraulics has the solution.

PneuDraulics has been supplying the aerospace industry with solenoid operated valves for over 55 years. We have a wide product offering, including 2 Position-2 Way, 2 Position-3 Way and 3 Position-4 Way, solenoid operated valves in direct acting and piloted versions. Flow rates ranging from less than 1 GPM through 40 GPM are available. Solenoid operated control valves with low leak rates, pressure to open & close and in normally open or normally closed configurations are available.

PneuDraulics designs and fabricates solenoid valve assemblies, allowing for

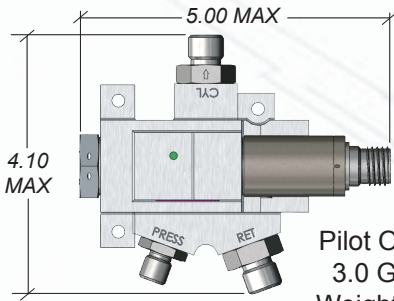
quick turnaround for custom designs. Solenoid valves can be made in single coil or dual coil configurations with internal wiring through a manifold body or with external electrical connectors.

For over 55 years PneuDraulics has been providing cost-effective solutions to the aerospace industry and our products are used today on aircraft on every continent around the world, in all classes of aircraft: military, commercial, cargo, general aviation, regional, helicopters, business jets, and spacecraft.

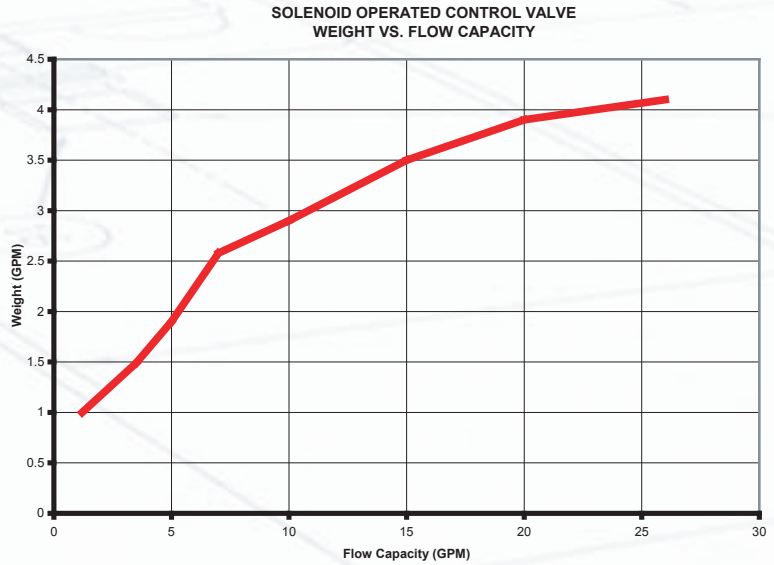


Main: 909-980-5366  
Fax: 909-945-2821  
Web: [www.PneuDraulics.com](http://www.PneuDraulics.com)  
E-mail: [Sales@PneuDraulics.com](mailto:Sales@PneuDraulics.com)

# PneuDraulics, Inc. - Solenoid Operated Control Valves



Pilot Operated 2P-3W  
3.0 GPM @ 50 psid  
Weight: 1.77 Lbs. Max



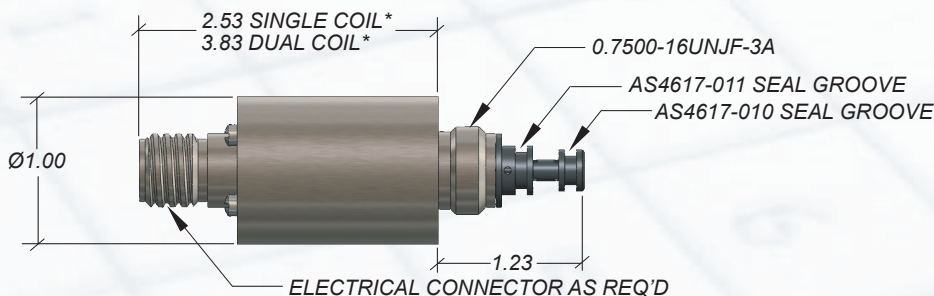
## TYPICAL QUALIFICATION REQUIREMENTS

Operating Pressure:	3000 psig
Proof Pressure	4500 psig
Burst Pressure:	7500 psig
Endurance:	60,000 cycles
Impulse:	100,000 cycles, 0-4500-0 psig
Altitude:	RTCA/DO-160F, Sec. 4, Cat. F2
High Temperature:	RTCA/DO-160F, Sec. 4, Cat. F2 +275°F Fluid & Ambient
Low Temperature:	RTCA/DO-160F, Sec. 4, Cat. F2 -67° Fluid & Ambient
Temperature Variation:	RTCA/DO-160F, Sec. 5, Cat. A
Humidity:	RTCA/DO-160F, Sec. 6, Cat. B
Shock:	RTCA/DO-160F, Sec. 7, Cat. B
Vibration:	RTCA/DO-160F, Sec. 8, Cat. S & H
Explosive Atmosphere:	RTCA/DO-160F, Sec. 9, Cat. E
Waterproofness:	RTCA/DO-160F, Sec. 10, Cat. S
Fluid Susceptibility:	RTCA/DO-160F, Sec. 11, Cat. F
Sand and Dust:	RTCA/DO-160F, Sec. 12, Cat. S
Fungus Resistance:	RTCA/DO-160F, Sec. 13, Cat. F
Salt Fog:	RTCA/DO-160F, Sec. 14, Cat. S
Magnetic Effect	RTCA/DO-160F, Sec. 15, Cat. B
Power Input:	RTCA/DO-160F, Sec. 16, Cat. A
Voltage Spike:	RTCA/DO-160F, Sec. 17, Cat. A
Audio Freq. Cond. Susc.	RTCA/DO-160F, Sec. 18, Cat. Z
Induced Signal Susc.	RTCA/DO-160F, Sec. 19, Cat. ZC
Radio Freq. Susc.	RTCA/DO-160F, Sec. 20, Cat. R
Emission of Radio Freq.	RTCA/DO-160F, Sec. 21, Cat. M
Lightning Ind. Tran. Susc.	RTCA/DO-160F, Sec. 22, Cat. A4J44
Lightning Direct Effect	RTCA/DO-160F, Sec. 23, Cat. ZZ
Icing	RTCA/DO-160F, Sec. 24, Cat. A
Static Discharge	RTCA/DO-160F, Sec. 25, Cat. A

## EXAMPLES OF CURRENT SOLENOID OPERATED CONTROL VALVE APPLICATIONS

Aircraft	Style	Flow	Pressure Drop
ERJ 190/195	2P-3W, Direct	0.50 GPM	50 psid
Cessna CJ Series	2P-2W, Direct	2.0 GPM	45 psid
G650	3P-3W, Piloted	2.0 GPM	30 psid
Global Express	2P-3W, Piloted	3.5 GPM	50 psid
ERJ170/190	2P-2W, Direct	3.7 GPM	100 psid
G150/200	2P-3W, Piloted	5.0 GPM	90 psid
G450	3P-4W, Piloted	6.0 GPM	80 psid
G450	2P-3W, Piloted	6.5 GPM	50 psid
Cessna CJ Series	3P-4W, Piloted	7.0 GPM	85 psid
Cessna XLS	2P-2W, Direct	7.0 GPM	105 psid
BD100	2P-3W, Piloted	10 GPM	60 psid
G650	3P-3W, Piloted	10 GPM	80 psid
ERJ 190/195	2P-3W, Piloted	15 GPM	50 psid
G650	3P-4W, Piloted	20 GPM	60 psid
Q400	2P-3W, Piloted	26 GPM	50 psid
B787	2P-3W, Piloted	37 GPM	100 psid

## SOLENOID VALVE DATA



\* DEPENDENT ON ELECTRICAL CONNECTOR CONFIGURATION

## ELECTRICAL CHARACTERISTICS

Operating Voltage:	18-32 VDC
Current:	1.0 Amp Max @ 32 VDC
Duty:	Continuous
Dielectric Strength:	1000 Vrms AC
Coil Resistance:	45 ohms (typ)
Pull-in Voltage:	10-13 VDC
Drop-out Voltage:	2-7 VDC